Working Paper #4 Equity and Fairness: A National Review

Unlike most other issues initially raised with regards to tolling and pricing, such as privacy and the reliability of technology, issues of fairness and equity continue to be raised as an objection to tolling as often today as they were 10 years ago. Left unanswered, equity and fairness concerns can constitute an insurmountable barrier to implementation.

The Policy Foundation

The analytical basis of equity and fairness in transportation infrastructure and services is found in seven policies and directives, in chronological order:

1. **Title VI of the Civil Rights Act of 1964**, which states, "No person in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."[1]

2. **National Environmental Policy Act of 1969**, which decided in favor of community-oriented analysis of policymaking.[2] For proposed major transportation facilities, an analysis of environmental impacts was now required that went beyond the infrastructure itself to include a broader geographic area.

3. **Federal Aid Highway Act of 1970,** which assured that transportation facilities be approved "in the best overall public interest" with efforts to eliminate or minimize effects on community cohesion, employment effects, and displacement of people.[3]

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[1] United States Code, *Title VI: Nondiscrimination in Federally Assisted Programs*, Civil Rights Act of 1964, 42 USC 2000(d) to 2000(d)(1).

[2] United States Code, *The National Environmental Policy Act*, 42 USC 4321-4347, Public Law 91-190 (1970), Public Law 94-52 (1975), Public Law 94-83 (1975), and Public Law 97-258 (1982).

[3] United States Code, 1970, *Federal-Aid Highway Act of 1970*, 23 USC 109(h).

4. **Civil Rights Restoration Act of 1987**, which identified the extent to which Title VI applied, to include all Federal-aid recipients, subrecipients, and contractors, regardless of whether specific activities in question are Federally funded or not.[4]

5. **Executive Order 12898 of 1994**, which established the precedent that environmental justice consideration, be extended to low-income populations and to avoid "disproportionately high and adverse" effects.[5]

6. **U.S. Department of Transportation implementation actions**, which provided requirements upon and guidance for transportation agencies and professionals in incorporating environmental justice principles in all transportation activities.[6] [7]

These seven actions combine to provide the fundamental concerns of Environmental Justice:[8]

1. To avoid, minimize, or mitigate disproportionately high and adverse human health or environmental effects, including social and economic effects, on minority populations and low-income populations.

2. To ensure the full and fair participation by all potentially affected communities in the transportation decision-making process.

3. To prevent the denial of, reduction in, or significant delay in the receipt of benefits by minority populations and low-income populations.

Environmental Justice may be the basis for issues of equity and fairness in the consideration of funding and planning process; however, the concepts of equity and fairness are not wholly comprised by Environmental Justice when interpreted literally. For example, if a project has benefits to a low-income population (defined by the Federal Highway Administration (FHWA) to mean a population below the Department of Health and Human Services' poverty guidelines),[9] yet is detrimental to a community just above the

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[4] United States Public Laws, 1988, *Civil Rights Restoration Act*, Public Law 100-259 (S. 557), March.

[5] Executive Order 12898, 1994, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, Federal Register, Volume 59, Number 32, February 16.

[6] U.S. Department of Transportation, 1997, *DOT Order on Environmental Justice to Address Environmental Justice in Minority Populations and Low-Income Populations*, DOT Order 5610.2, April.

[7] U.S. Department of Transportation, 1998, *FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, DOT Order 6640.23, December.

[8] Federal Highway Administration, 2005, *Questions and Answers on Environmental Justice and Title VI*, http://www.fhwa.dot.gov/environment/ejustice/facts/index.htm, accessed October 9.

[9] U.S. Department of Transportation, 1998, *FHWA Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, DOT Order 6640.23, December. This order references eligibility criteria for the Community Services Block Grant Program, found at http://aspe.os.dhhs.gov/poverty/poverty.htm.

poverty level, does this make the project a fair and equitable project simply because it achieves the literal definition of environmental justice? In order to account for issues similar to these, many practitioners advocate for considering the context, perspective, and timeframe of policy decisions on the broader definition of disadvantaged groups. Another related equity issue is the situation of two communities with similar demographics, where one community has extensive toll facilities and the other community does not.

As articulated by a publication from the Institute for Transportation Studies at the University of California at Berkeley, equity and fairness issues most frequently arise when:[10]

1. Some communities get the benefits of improved accessibility, faster trips, and congestion relief, while others experience fewer benefits;

2. Some communities suffer disproportionately from transportation programs' negative impacts, like air pollution;

3. Some communities have to pay higher transportation taxes or higher fares than others in relation to the services that they receive; or

4. Some communities are less represented than others when policy-making bodies debate and decide what should be done with transportation resources.

These four issues are generally identified within the concepts of ***geographic equity***, ***income equity***, and ***participation equity***. However, there are additional measures of equity and fairness.

The Victoria Transport Policy Institute identifies ***opportunity equity*** issues as they pertain to mobility need and accessibility; whereby, certain communities may disproportionately benefit from actions taken by the state. In a violation of opportunity equity, the extent of mobility needs may be greater for Population A than Population B, but mobility enhancements are offered disproportionately to Population B.[11] Put differently, if a toll road is implemented serving a high-income community, rather than a needed road from a low-income community solely due to cost recovery, this would violate the concept of opportunity equity.

In a study for the Santa Clara Valley Transportation Authority in regards to the specific evaluation of equity for High-Occupancy Toll (HOT) lane facilities, researchers identified

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[10] Cairns, S., J. Greig, and M. Wachs, 2005, *Environmental Justice and Transportation: A Citizen's Handbook*, Institute of Transportation Studies, University of California at Berkeley, January 2003, http://www.its.berkeley.edu/publications/ejhandbook/ejhandbook.html, accessed October 9.

[11] Littman, T., 2005, *Evaluating Transportation Equity: Guidance for Incorporating Distributional Impacts in Transportation Planning*, Victoria Transport Policy Institute, September, http://www.vtpi.org/equity.pdf, accessed October 9, 2005.

a fifth type of equity consideration: ***modal equity***, which pertains to the perceived attractiveness of commuting by single-occupant vehicles in HOT lanes relative to the travel time benefits extended to high-occupant vehicle users under HOV lane operations.[12] In other words, public opinion on the part of carpoolers and bus riders may be predisposed against toll roads, as they feel that one should "do the right thing" in order to have the travel time benefits these facilities provide. This would be an example of perceived modal equity.

Equity Issues in Toll Proposals

A fair and equitable policy regarding tolls must be viewed under a contemporary context. Eighty years ago, publicly-financed roads were perceived as unfair, as an extremely small portion of the population owned an automobile. Tolls were used extensively in the first few centuries of this country's existence, into the first five and a half decades of the 20th century. Eventually, however, fuel taxes won out as the primary financing tool for the development of the modern highway system, as the correlation between road use and fuel was viewed as a sufficient nexus. Today, vehicle ownership is pervasive, and the vast majority of the adult population personally drives a vehicle at some point on a public road.[13] As a result, public opinion now tends to view roads as a public good. Due to rising fuel efficiencies and fixed taxation levels, fuel tax revenue as a percentage of transportation need has been declining substantially, and actual tax receipts may soon be in decline.[14,15] As governments turn to tolls as a way of shoring-up transportation funding, public opinion concerns with equity have also risen with it.

Tolling has many applications currently in the United States. The various applications can be summarized into four general categories, with the understanding that some proposed projects do not fit neatly in these four categories: 1) flat-rate tolls on highways and bridges (traditional toll facilities), 2) variable-rate tolls on highways and bridges (value

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[12] Weinstein, A., and G. Sciara, 2004, *Assessing the Equity Implications of HOT Lanes*, Santa Clara Valley Transportation Authority, November.

[13] According to the 2000 Census, Summary File 3 data, approximately 96 percent of owner-occupied households and 78 percent of renter-occupied households throughout the United States have a personal vehicle available. In the State of Washington, an even greater share of the population uses the roads, with 97 percent of owner-occupied households and 84 percent of renter-occupied households have a personal vehicle available.

[14] Oregon Department of Transportation, *Road User Fee Task Force*, Office of Innovative Partnerships and Alternative Funding, http://www.oregon.gov/ODOT/HWY/OIPP/ruftf_faq.shtml, accessed October 9, 2005.

[15] Taylor, B., A, Weinstein, and M. Wachs, 2001, *Reforming Highway Finance: California's Policy Options*, University of California Transportation Center, http://www.uctc.net/papers/488.pdf, accessed October 9, 2005.

pricing), 3) variable tolls on exclusive facilities within corridors (express toll lanes), and 4) variable tolls on exclusive HOV facilities (HOT lanes). A fifth category also deserves mention – vehicular use pricing – which includes advanced implementations, such as a Vehicle Miles Traveled (VMT) toll and cordon toll. These applications have not been implemented in the United States or Canada, but have had some limited applications in Great Britain, Singapore, Norway, and Germany.[16]

Although different in their implementation and focus on the five areas of equity outlined above, these categories all face the same test of fairness: the distribution of costs and benefits and the public acceptance of that distribution. Public opposition has been the overriding factor in tolling projects that have failed to come to implementation, rather than a technical evaluation of equity. As a result, the review of equity issues in toll projects is largely a study of public opinion.[17]

The concept of tolling is new in many states, and proposed projects have inevitably been controversial to one extent or another everywhere they have been considered. A variety of reasons contribute to toll projects remaining controversial. As it pertains to equity and fairness, this includes concerns for low-income individuals, geographic distribution of toll benefits and burdens, and fairness to user classes. Addressing concerns of equity and fairness has taken a considerable amount of time to nurture in states even with implemented projects, such as California, New York, Minnesota, and Texas. In all states, public opinion was generally lukewarm, at best, to start.[18] [19] [20]

Limited studies have been conducted regarding the fairness of new toll facilities. Generally, proposed new road or bridge projects with a tolling element have been successfully criticized on established environmental documentation procedures, even if the principal (unofficial) objection on the part of opinion-setters has been the fairness of tolling. Examples can be found with the Jefferson Parkway (W-470) proposed toll corridor in Colorado, the Mid-State Tollway in Alameda and Contra Costa Counties in California, and the

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[16] California, Colorado, Minnesota, Oregon, and Washington additionally studied applications of areawide pricing in the past 10 years. No specific proposals ever moved forward, and as such, data is conceptual only.

[17] It is not the purpose of this section to review public opinion and attitudes regarding tolling and pricing in general. Rather, this section reviews public opinion strictly from the perspective of equity and fairness.

[18] Munnich, L., and J. Loveland, 2005, *Value Pricing and Public Outreach: Minnesota's Lessons Learned*, Transportation Research Board, Paper 05-0394, 84th Annual Meeting, January.

[19] Ungemah, D., M. Swisher, and C. Tighe, 2005, *You're Making Me HOT: Talking High-Occupancy Toll (HOT) Lanes with the Denver Public*, Transportation Research Board, Paper 05-1191, 84th Annual Meeting, January.

[20] Stockton, W. R., C. L. Grant, F. McFarland, N. R. Edmonson, and M. A. Ogden, 1997, *Feasibility of Priority Lane Pricing on the Katy HOV Lane: Feasibility Assessment*, Research Report 2701-F, Texas Transportation Institute, Texas A&M University, June.

Trans-Texas Corridor in Texas. As a result, separating issues of equity from other facility development issues is difficult in this scenario.

By comparison, a greater amount of data is available regarding the study of equity for recent Value Pricing Pilot Program projects. Extensive evaluation efforts of the SR 91 (express toll lanes) and I-15 (HOT lanes) have yielded significant data. Additional efforts to investigate and document equity issues have been conducted for I-394 (HOT lanes), I-25 (HOT lanes), Tappan Zee Bridge (value pricing), and Leeway toll bridge (value pricing). Some of the more conclusive findings from this body of research are reported below:

1. The Center for Transportation Research at the University of Texas conducted a statewide public opinion assessment of new toll roads, new toll lanes, and HOT lanes in various areas of Texas for the Texas Department of Transportation. In general, a majority of respondents throughout Texas indicated that toll roads were unfair (55 percent), should not be used to finance new roads (51 percent), and should not be used to finance improvements to existing roads (71 percent). Negative perceptions of the fairness of toll roads occurred more often for respondents in areas currently without toll roads (such as Lubbock, Corpus Christi, and San Antonio) than areas with toll roads (such as Houston and Dallas), typically by 10 to 15 percent. Although the negative responses are strong, and indicate a clear public perception issue with the fairness of tolls, it should be noted that Texans favored tolling over fuel taxes in all areas, except San Antonio. Finally, although support for tolls on new and existing roads was low, support for HOT lanes was much stronger, with 52 percent in favor.[21]

2. The California Polytechnic State University evaluated the user profiles of travelers on SR 91, an express toll lane, immediately following implementation and opening of that facility. Findings from this evaluation, repeated often to counter criticism of equity and fairness issues in express toll lanes and HOT lanes, indicated that low-income drivers use the express lanes and that they approve of them as much as those of higher incomes. Over 50 percent of commuters with household incomes less than $25,000 approved of the express toll lane concept on SR 91, again similar to opinions of those with higher-household incomes.[22]

3. A Villanova University study of transponder acquisition on the SR 91 express lanes found an inequitable hurdle for low income to access the facility due to the unavailability of credit cards, checking accounts, or sufficient cash savings to pay

[21] Podgorski, K., and K. Kockelman, 2005, *Public Perceptions of Toll Roads: A Survey of the Texas Perspective*, Center for Transportation Research, University of Texas, http://www.ce.utexas.edu/prof/kockelman/public_html/TRB05PublicResponsetoTRs.pdf, accessed October 9, 2005.

[22] Sullivan, E., 2000, *Continuation Study to Evaluate the Impacts of the SR 91 Value-Priced Express Lanes Final Report*, California Polytechnic State University, December, http://ceenve.calpoly.edu/sullivan/SR91/final_rpt/FinalRep2000.pdf, accessed October 9, 2005.

for transponder deposits. These barriers become a greater barrier to usage of the facility than trip cost when modeled for lower-income users.[23]

4. Research efforts for the I-15 HOT lanes included attitudinal and use studies of the existing I-15 HOT lanes, and stated-preference surveys for the I-15 Managed Lane expansion proposal. Results showed lower-income drivers used the HOT lanes (as toll payers) less than a normalized model would reflect for the facility, but expressed opinions favorable to the program and to its fairness.[24] This attitude was confirmed in an extensive, stated-preference survey for the proposed managed lane expansion. This survey found 60 percent of low-income respondents approved of the HOT lane concept (roughly equivalent to the percentage of higher-income respondents), 78 percent of low-income respondents believed the concept of using the lanes for a toll was fair (no statistical difference between income levels), and 75 percent of low-income respondents expressed support for the concept of managed lanes in general (higher than middle-income respondents).

   The highest stated desired uses of revenue were:

   - Improve all San Diego freeways (31 percent);
   - Improve I-15 general purpose lanes (28 percent);
   - Improve I-15 express lanes (20 percent);
   - Extend I-15 express lanes (15 percent); and
   - Add more general purpose lanes to I-15 (12 percent).

   Overall, this survey found significant evidence that HOT lanes do not negatively impact lower-income communities.[25]

5. Researchers at San Jose State University and the University of California at Berkeley investigated equity issues regarding HOT lanes in particular for the Santa Clara Valley Transportation Authority. Their findings indicated that:

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[23] Parkany, E., 2005, *Environmental Justice Issues Related to Transponder Ownership and Road Pricing*, Transportation Research Board, 84th Annual Meeting, January.

[24] Supernak, J., D. Brownstone, J. Golob, T. Golob, C. Kaschade, C. Kazimi, E. Schreffler, and D. Steffey, , 2000, *I-15 Congestion Pricing Project Monitoring and Evaluation Services Phase II Year Two Overall Report*, San Diego Association of Governments, May, http://argo.sandag.org/fastrak/pdfs/yr2_overall.pdf, accessed October 9, 2005.

[25] Redman, D., J. Norman, and F. Wilson, 2002, *I-15 Managed Lanes Value Pricing Project Planning Study Volume 2 Public Outreach*, San Diego Association of Governments, February, http://argo.sandag.org/fastrak/pdfs/concept_plan_vol2.pdf, accessed October 9, 2005.

a. Income equity is the most frequently cited equity concern.

b. Geographic equity concerns arise where project benefits and costs have strong spatial patterns, or where different constituencies are noticeably segregated. For example, the authors specifically cited an example of proposed HOT lanes in Maryland. Residents who lived closer to Washington, D.C. feared that the toll rate for them to use the HOT lanes would be made higher by the volume of travelers commuting from farther out. As a result, they perceived HOT lanes to be inequitable as the proposed lanes would not benefit them (on a cost-per-use basis) as much as it would residents farther out from D.C. This is similar to complaints often heard on the City's Metro rail system – trains are already full by the time they reach the inner stations.

c. Modal equity is a real concern to groups that promote transit, carpools, or other modes. Concerned participants do not believe it is fair to offer the same travel time savings to those who pay a toll as for those that "do the right thing" by sharing a ride or riding the bus.[26]

6. For new toll roads and bridges, the World Bank identified toll roads as a way to positively impact equity by supporting infrastructure networks in areas that are less wealthy than others. In order to accomplish these objectives, toll revenues must be redistributed with the expressed goal of aiding less developed areas. Additional ways tolls can be used to benefit equity include financial support and/or lower tolls for targeted communities.[27,28] This concept is counter to the conventional wisdom in the United States, where there is a strong bias towards the idea that toll revenues should be used within the corridor or area where they were generated.

Addressing Equity Concerns

National experience has shown that equity issues can become a factor in the consideration of proposed toll projects. However, careful and deliberate planning may help mitigate equity concerns. As Washington moves forward with the consideration of tolls in the State, planners and policy-makers should address key questions designed to identify:

[26] Weinstein, A., and G. Sciara, November 2004.

[27] The World Bank, 1999, *Review of Recent Toll Road Experience in Selected Countries and Preliminary Tool Kit for Toll Road Development*, Asian Toll Road Development Program, Draft Final Report, May.

[28] The World Bank, *Toll Roads and Concessions*, unknown date/ongoing knowledge base, http://www.worldbank.org/transport/roads/toll_rds.htm, accessed October 9, 2005.

1) potential equity concerns, and 2) ways to mitigate those that may occur. Some of these questions include:

- Are proposed toll facilities located in the areas of highest need?
- Are proposed facilities disproportionately influenced by potential cost recovery?
- Are the distributions of benefits aligned with the principles of environmental justice?
- Are there ways to redistribute revenues to disadvantaged communities?
- Have alternative access options been considered for the facility, such as free use by HOVs or discounted toll rates for low-income households?
- If electronic tolling is included, have issues related to credit cards and account debits been resolved in order to permit the broadest opportunity as possible to participate?
- Are interest and citizen groups properly involved throughout the process of identifying projects and considering the impacts on their communities?

Although no assessment can completely address all potential issues or equity and fairness, the principle of environmental justice requires transportation professionals to evaluate proposed toll projects with an open eye and open mind. Ultimately, no project needs to be unnecessarily delayed or tabled due to issues of equity. Rather, correctly identifying concerns and mitigating them through deliberate action can ensure a win-win solution for project development.

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